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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/941,782

08/30/2001

Takashi Iwaki

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06/13/2006

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,782

Applicant(s)

IWAKI ET AL.

Examiner

Peter J. Macchiarolo

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/30/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application on 11/22/2004. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/2004 and 12/08/2004 have been entered. However, the indicated allowability of the claims is withdrawn in view of the newly discovered reference(s) to Yamanobe (USPN 6221426; "Yamanobe"). Rejections based on the newly cited reference(s) follow.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 11/22/2004 and 12/08/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the electron beam (claims 2, 10, and 16), the light (claims 3, 11, and 21) the light sources (claims 4-6, 12-14, and 24-26) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 7, 9, 10, 16-19, and 29-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Yamanobe (USPN 6221426; “Yamanobe”).

Regarding claims 1 and 9, Yamanobe discloses in figures 5-8, a method for manufacturing a an electron-emitting device comprising a step forming a solid-state polymer film (step 2) including a carbon atomic bond (column 11, lines 28-47) between a pair of electrodes (2, 3) formed on a substrate (1), a step for heating the polymer film (step 5) to change the polymer film into an electro-conductive film having an electrical resistance lower than that of the polymer film (column 9, lines 31-55); and a step for providing a potential difference (step 3) between the pair of electrodes to energize electrically the electro-conductive film.

Regarding claims 2 and 10, Yamanobe discloses in column 7 lines 14-36 the step for heating includes a step for illuminating an electron beam onto at least a part of the polymer film.

Regarding claim 7, Yamanobe discloses in column 11, lines 28-62, that the polymer film is an aromatic polymer film.

Regarding claim 16, Yamanobe discloses in figures 5-8, a method for manufacturing a an electron-emitting device comprising a step forming a solid-state polymer film (step 2) including a carbon atomic bond (column 11, lines 28-47) between a pair of electrodes (2, 3) formed on a substrate (1), a step for illuminating an electron beam (step 5) onto at least a part of said polymer film (column 7 lines 14-36); and a step for providing a potential difference (step 3) between the pair of electrodes.

Regarding claim 17, Yamanobe discloses in column 7 lines 14-36 wherein the step for illuminating the electron beam onto said polymer film includes a step for giving conductivity to at least a part of said polymer film.

Regarding claim 18, Yamanobe discloses in column 9, lines 31-55 wherein the step for illuminating the electron beam onto said polymer film includes a step for reducing electrical resistance of said polymer film.

Regarding claim 19, Yamanobe discloses in column 11, lines 28-62, that the polymer film is an aromatic polymer film.

Regarding claim 29, Yamanobe discloses in figures 16 and 17, a method for manufacturing an electron source having a plurality of electron-emitting devices, wherein each electron-emitting device is manufactured in accordance with the method according to claim 1.

Regarding claim 30, Yamanobe discloses in figures 16 and 17, a method for manufacturing an image-forming apparatus having an electron source including a plurality of electron-emitting devices, and an image-forming member for forming an image by illumination of electron emitted from said electron source, wherein: said electron source is manufactured by a method according to claim 29.

Regarding claim 31, Yamanobe discloses in figures 5-8, a method for manufacturing an electron-emitting device comprising a step for forming a polymer film without including a metal and a non-metal conductive material (step 2, column 8 lines 35-61) between a pair of electrodes (2, 3) formed on a substrate, a step for heating the polymer film (step 5) to change the polymer film into an electro-conductive film having an electrical resistance lower than that of the polymer film (column 9, lines 31-55); and a step for providing a potential difference (step 3) between the pair of electrodes to energize electrically the electro-conductive film.

Regarding claim 32, Yamanobe discloses in figures 5-8, a method for manufacturing an electron-emitting device comprising a step for forming a polymer film without including a metal and a non-metal conductive material (step 2, column 8 lines 35-61) between a pair of electrodes (2, 3) formed on a substrate, a step for heating the polymer film (step 5) to reduce an electrical resistance of the polymer film (column 9, lines 31-55); and a step for providing a potential difference (step 3) between the pair of electrodes

Claims 1, 2, 7, 9, 10, 16-19, and 29-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamanobe.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims , 2, 7, 9, 10, 16-19, and 29-32, the reasons for rejecting have been discussed above and will not be repeated here.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 8, 11-15 and 20-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanobe.

Regarding claims 3-5 and 11-15, Yamanobe is silent to the step for heating including a step for illuminating visible light onto at least part of the polymer film.

However, it is well known in the art that illuminating light from a light source such as a xenon lamp or halogen lamp onto at least a part of a surface of the polymer is an acceptable

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alternative to heating using an electron beam to provide heat. One would be motivated to this configuration to reduce manufacturing costs, since using a xenon or halogen lamp will be less expensive than using an electron beam.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the electron emitting device of Yamanobe with the heating step including illuminating visible light onto part of the polymer via xenon lamp or halogen lamp to reduce overall manufacturing costs.

Regarding claim 6, Yamanobe discloses in column 12 lines 18-24, the step for heating may include a step for illuminating an electron beam onto at least a part of the polymer film.

Regarding claims 8, 20, Yamanobe is silent to using an ink jet method, but instead teaches the polymer film is applied via a spinner.

However, using an ink jet system instead of a spinner for forming a polymer is well known in the art. It is known that ink jetting is an easier, faster, more precise and accurate manufacturing method.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the electron emitter of Yamanobe including utilizing an ink jet system to allow for an easier, faster, more precise and accurate manufacturing method.

Regarding claims 21-28, the limitations herein have been previously discussed above and will not be repeated here.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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